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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,703	04/30/2001	Kenro Hama	018775-826	9401

7590 01/30/2009

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ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
01/30/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 09/843,703	**Applicant(s)** HAMA ET AL.	
	Examiner BENIYAM MENBERU	**Art Unit** 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _13 November 2008_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-3,5,6,8,9,11,12,14,15,17,18 and 20-27_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-3,5,6,8,9,11,12,14,15,17,18 and 20-27_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments filed November 13, 2008 have been fully considered but they are not persuasive.

The Remark (11/13/2008) stated that Shirasawa et al '590 does not disclose of a first range using preset minimum and maximum values. However Examiner disagrees because Shirasawa et al '590 discloses of detecting white image portions (column 15, lines 6-9, 17-22) based on the max (r,g,b) and max difference(r,b,g) values. The **white image data corresponds to [r, g, b] = 0,0,0** (column 9, lines 53-57). The white image data are when r,g,b values are small and the difference of r,g,b values is small (column 15, lines 23-31). The condition for white image area is the first condition in column 15, lines 42-47, wherein MAX (r, g, b) < Th1 and max (|r-g|, |g-b|, and |r-b|) < Th2. Thus the **preset minimum** is by default **r,g,b = 0, 0, 0** for white image and the **maximum preset** value corresponds to the Th1 value. The preset minimum is r,g,b=0,0,0 as shown in Figure 14 in zone Z0 wherein the origin defines the minimum value of 0,0,0. Further when max (r,g,b) <Th1, for zone Z0, by definition then all components r, g, b have to be less than Th1, therefore

1) r < Th1, g < Th1, b < Th1

This equation 1 defines the first range for all the color components. The range is defined by color component values less than Th1 for each color component. The minimum of these ranges in equation 1 is "0" since that corresponds to the white image data.

Further the second range is defined when the max difference = D = max (|r-g|, |g-b|, and |r-b|) < Th2. The second range is **preset** to the value Th2 and default minimum value of 0 since the absolute values of r-g, g-b, r-b cannot be negative.

Thus when the value D which is max (|r-g|, |g-b|, |r-b|) satisfies respective second ranges:

1') D<Th2 for zone Z0,

Then by definition all difference values |r-g|, |g-b|, |r-b| must be less than Th2, therefore:

2') |r-g| < Th2, |g-b| < Th2, |r-b| < Th2

Wherein the maximum preset value is Th2 and minimum is 0 since absolute value is positive.

The threshold value Th2 is set in accordance with the detection of white image area (**specified color**) (column 15, lines 17-28; column 18, lines 8-15; threshold values th1, and th2 are based on detection of background image area).

Thus Shirasawa et al '590 discloses that white image data is detected as the specific color based on both the r,g,b value and the r,g,b difference value (column 15, lines 15-22).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 26 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The values dRmin, dRmax, dGmin, dGmax, dBmin, dBmax as stated in claim 26 are indefinite since they don't have a specific value. It is undefined what the range in claim 26 is since these color difference can have any value.

The values Gmin, Bmin, Gmax, Bmax as stated in claim 27 are indefinite since they don’t have a specific value. It is undefined what the range in claim 27 is since these color values can have any value.

Claim Objections

4. Claims 26 and 27 are objected to because of the following informalities:

Both claims 26 and 27 are missing a period at the end of the respective claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 11, 12, 14, 15, 17, 18, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5689590 to Shirasawa et al.

Regarding claim 11, Shirasawa et al '590 discloses an image processor for detecting a specified color (column 15, lines 6-9, 17-22) comprising:

a first decision controller which decides whether each input color component gradation value of a target pixel exists in a respective first range for each of the color components (column 16, lines 33-46; column 17, lines 27-30; The first ranges is defined by pixel components (r, g, b) having density levels (gradation) less than th1.; The object pixel is target pixel; The white image data are when r,g,b values are small and the difference of r,g,b values is small (column 15, lines 23-31). The condition for white image area is the first condition in column 15, lines 42-47, wherein MAX (r, g, b) < Th1 and max (|r-g|, |g-b|, and |r-b|) < Th2. Thus the preset minimum is by default r,g,b = 0, 0, 0 for white image and the maximum preset value corresponds to the Th1 value. The preset minimum is r,g,b=0,0,0 as shown in Figure 14 in zone Z0 wherein the origin defines the minimum value of 0,0,0. Further when max (r,g,b) <Th1, for zone Z0, by definition then all components r, g, b have to be less than Th1, therefore

1) r < Th1, g < Th1, b < Th1

This equation 1 defines the first range for all the color components. The range is defined by color component values less than Th1 for each color component. The minimum of these ranges in equation 1 is “0” since that corresponds to the white image data.), the range being defined by a preset minimum and a preset maximum gradation value for each color component (the preset minimum is by default r,g,b = 0, 0, 0 for white image and the maximum preset value corresponds to the Th1 value. The preset minimum is

r,g,b=0,0,0 as shown in Figure 14 in zone Z0 wherein the origin defines the minimum value of 0,0,0.);

a second decision controller which performs a linear calculation between each color component gradation value of the target pixel and decides whether results of the calculation exist in a respective second range for each linear calculation that is different from the first ranges (column 17, lines 56-67; column 18, lines 28-36; The difference (linear operation) density level (gradation) between the maximum (r, g, b) and minimum (r, g, b) components is compared to different threshold th2 (second ranges). When the maximum difference value is less than th2 (second ranges) then all the other possible difference value between other components will also be less than threshold th2. So when the maximum minus the minimum component is less than th2 than all the other difference values of the other components will also be less than th2.), wherein the second range is preset in accordance with the specified color (the second range is defined when the max difference = D = max (|r-g|, |g-b|, and |r-b|) < Th2. The second range is preset to the value Th2 and default minimum value of 0 since the absolute values of r-g, g-b, r-b cannot be negative. Thus when the value D which is max (|r-g|, |g-b|, |r-b|) satisfies respective second ranges:

1’) D<Th2 for zone Z0,

Then by definition all difference values |r-g|, |g-b|, |r-b| must be less than Th2, therefore:

2’) |r-g| < Th2, |g-b| < Th2, |r-b| < Th2 ;

Wherein the maximum preset value is Th2 and minimum is 0 since absolute value is positive. The threshold value Th2 is set in accordance with the detection of white image area (specified color) (column 15, lines 17-28; column 18, lines 8-15; **threshold values th1, and th2 are based on detection of background image area**); and

a color decision controller which decides that the target pixel has the specified color when the first decision controller decides that each color component gradation value of the target pixel exists in the first ranges and the second decision controller decides that the results exist in the second ranges (column 17, lines 63-67; column 18, lines 1-14; When both thresholds th1, th2 are satisfied for the color components the output color value rp, gp, bp are set to 0's (column 9, lines 54-57)).

Regarding claim 12, Shirasawa et al '590 teaches all the limitations of claim 11, Further Shirasawa et al '590 discloses the image processor according to claim 11, wherein said second decision controller calculates differences between the color component gradation value of the target pixel and decides whether the differences exist in the second ranges (column 17, lines 56-67; column 18, lines 28-36; The difference (linear operation) density level (gradation) between the maximum (r, g, b) and minimum (r, g, b) components is compared to different threshold th2 (second ranges). When the maximum difference value is less than th2 (second ranges) then all the other possible difference value between other components will also be less than threshold th2. So when the maximum minus the minimum component is less than th2 than all the other difference values of the other components will also be less than th2.).

Regarding claim 14, see Rejection of claim 11 as shown above. The apparatus of Shirasawa et al ‘590 renders obvious the method steps disclosed in claim 14.

Regarding claim 15, see Rejection of claim 12 as shown above. The apparatus of Shirasawa et al ‘590 renders obvious the method steps disclosed in claim 15.

Regarding claim 17, see Rejection of claim 11 as shown above. The apparatus of Shirasawa et al ‘590 renders obvious the programming steps disclosed in claim 17 since Shirasawa et al ‘590 discloses software for the processing (column 12, lines 66-67).

Regarding claim 18, see Rejection of claim 12 as shown above. The apparatus of Shirasawa et al ‘590 renders obvious the programming steps disclosed in claim 18 since Shirasawa et al ‘590 discloses software for the processing (column 12, lines 66-67).

Regarding claim 27, Shirasawa et al ‘590 teaches all the limitations of claim 11. Further Shirasawa et al ‘590 discloses the image processor according to claim 11, wherein the second range is preset in advance in accordance with the specified color (column 15, lines 17-28; column 18, lines 8-15; threshold values th1, and th2 are based on detection of background image area) so that as to the input image data of an i-th pixel having color component gradation values Ri, Gi, Bi, the specified color having color component gradation values R, G, B (The **white image data corresponds to [r, g, b] = 0,0,0** (column 9, lines 53-57)), and Gmin, Gmax, Bmin and Bmax determined beforehand, the second decision means decides that the target pixel is a detection color

candidate when

$R\text{-}G_{min} \leq R_i\text{-}G_i \leq R\text{-}G_{max}$;

$G\text{-}B_{min} \leq G_i\text{-}B_i \leq G\text{-}B\ max$; and

$R\text{-}B\ min \leq R_i\text{-}B_i \leq R\text{-}B_{max}$

(The second range is defined when the max difference = D = max (|r-g|, |g-b|, and |r-b|) < Th2. The second range is **preset** to the value Th2 and default minimum value of 0 since the absolute values of r-g, g-b, r-b cannot be negative.

Thus when the value D which is max (|r-g|, |g-b|, |r-b|) satisfies respective second ranges:

1') D<Th2 for zone Z0,

Then by definition all difference values |r-g|, |g-b|, |r-b| must be less than Th2, therefore:

2') |r-g| < Th2, |g-b| < Th2, |r-b| < Th2

Wherein the maximum preset value is Th2 and minimum is 0 since absolute value is positive. Since R, G, B values, Gmin, Bmin values, and Gmax, Bmax values are **arbitrary**, **R-Gmin, G-Bmin, and R-B min** values can be equivalent to 0 and **R-Gmax, G-Bmax, and R-Bmax** can be equivalent to a threshold Th2 as taught by Shirasawa et al '590. Therefore the range as defined in equation 2' above can read on the range as defined in the claim.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 5, 8, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5689590 to Shirasawa et al in view of U.S. Patent No. 6167167 to Matsugu et al.

Regarding claim 1, Shirasawa et al '590 discloses an image processor for detecting a specified color (column 15, lines 6-9, 17-22) comprising:

a first decision controller which decides whether each input color component gradation value of a target pixel exists in a respective first range for each of the color components, (column 16, lines 33-46; column 17, lines 27-30; The first ranges is defined by pixel components (r, g, b) having density levels (gradation) less than th1.; The white image data are when r,g,b values are small and the difference of r,g,b values is small (column 15, lines 23-31). The condition for white image area is the first condition in column 15, lines 42-47, wherein MAX (r, g, b) < Th1 and max (|r-g|, |g-b|, and |r-b|) < Th2. Thus the preset minimum is by default r,g,b = 0, 0, 0 for white image and the maximum preset value corresponds to the Th1 value. The preset minimum is r,g,b=0,0,0 as shown in Figure 14 in zone Z0 wherein the origin defines the minimum value of 0,0,0. Further

when max (r,g,b) <Th1, for zone Z0, by definition then all components r, g, b have to be less than Th1, therefore

1) r < Th1, g < Th1, b < Th1

This equation 1 defines the first range for all the color components. The range is defined by color component values less than Th1 for each color component. The minimum of these ranges in equation 1 is “0” since that corresponds to the white image data.) the range being defined by a preset minimum and a preset maximum gradation value for each component (the preset minimum is by default r,g,b = 0, 0, 0 for white image and the maximum preset value corresponds to the Th1 value. The preset minimum is r,g,b=0,0,0 as shown in Figure 14 in zone Z0 wherein the origin defines the minimum value of 0,0,0.);

a second decision controller which decides whether differences between each color component gradation value of the target pixel exist in a respective second range that is different from the first ranges (column 17, lines 56-67; column 18, lines 28-36; The difference density level (gradation) between the maximum (r, g, b) and minimum (r, g, b) components is compared to different threshold th2 (second ranges). When the maximum difference value is less than th2 (second ranges) then all the other possible difference value between other components will also be less than threshold th2. So when the maximum minus the minimum component is less than th2 than all the other difference values of the other components will also be less than th2.), wherein the second range is preset in accordance with the specified color (the second range is

defined when the max difference = D = max (|r-g|, |g-b|, and |r-b|) < Th2. The second range is preset to the value Th2 and default minimum value of 0 since the absolute values of r-g, g-b, r-b cannot be negative. Thus when the value D which is max (|r-g|, |g-b|, |r-b|) satisfies respective second ranges:

1') D<Th2 for zone Z0,

Then by definition all difference values |r-g|, |g-b|, |r-b| must be less than Th2, therefore:

2') |r-g| < Th2, |g-b| < Th2, |r-b| < Th2

Wherein the maximum preset value is Th2 and minimum is 0 since absolute value is positive. The threshold value Th2 is set in accordance with the detection of white image area (specified color) (column 15, lines 17-28; column 18, lines 8-15; **threshold value th2 used for the second range is based on detection of background image area**); and

a color decision controller which decides that the target pixel has the specified color when the first decision controller decides that each color component gradation value of the target pixel exist exists in the first ranges and the second decision controller decides that the differences exist in the second ranges (column 17, lines 63-67; column 18, lines 1-14; When both thresholds th1, th2 are satisfied for the color components the output color value rp, gp, bp are set to 0's (column 9, lines 54-57)). However Shirasawa et al '590 does not disclose wherein the second decision controller determines differences between each color component gradation value of the target pixel and those of pixels adjacent thereto.

Matsugu et al '167 discloses wherein the second decision controller determines differences between each color component gradation value of the target pixel and those of pixels adjacent thereto (column 14, lines 29-67).

Having the system of Shirasawa et al '590 and then given the well-established teaching of Matsugu et al '167, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Shirasawa et al '590 as taught by Matsugu et al '167, since Matsugu et al '167 stated in col. 2, Lines 37-49, such a modification would provide a reliable method for extracting image data.

Regarding claim 3, Shirasawa et al '590 in view of Matsugu et al '167 teach all the limitations of claim 1. Further Matsugu et al '167 discloses the image processor according to claim 1, further comprising an edge detector which calculates differences in the color gradation value between the target pixel and a plurality of adjacent pixels thereof in a direction and decides a position of an edge based on the differences (column 11, lines 41-59; column 12, lines 26-50; The target is defined by the subject image pixel and the background pixel represent the adjacent pixels.).

Regarding claim 5, see Rejection of claim 1 as shown above. The apparatus of Shirasawa et al ‘590 in view of Matsugu et al '167 renders obvious the method steps disclosed in claim 5.

Regarding claim 8, see Rejection of claim 1 as shown above. The apparatus of Shirasawa et al ‘590 in view of Matsugu et al '167 renders obvious the programming

steps disclosed in claim 8 since Shirasawa et al ‘590 discloses software for the processing (column 12, lines 66-67).

Regarding claim 26, Shirasawa et al '590 in view of Matsugu et al '167 teaches all the limitations of claim 1. Further Matsugu et al '167 discloses the image processor according to claim 1, wherein the second range is preset in advance in accordance with the specified color so that maximum values dRmax, dGmax and dBmax, and minimum values dRmin, dGmin and dBmax of differences dR, dG and dB of R, G and B data of adjacent pixels have been determined beforehand and the second decision means decides that the target pixel is a detection color candidate when:

$dRmin \leq dR \leq dRmax$;

$dGmin \leq dG \leq dGmax$; and

$dBmin \leq dB \leq dBmax$.

(column 25, lines 41-47; column 14, lines 29-58; The difference $|P_{iD} - P_{kd}|$ represents the difference of the respective R, G, B data of ith pixel and adjacent kth pixel. The second range is defined by the pixels wherein the difference of R, G, B, data with adjacent pixels satisfy the range as follows:

$|P_{iD} - P_{kd}| < \delta I$. Since absolute value is greater than or equal to zero, the range is defined by a minimum value of 0 and maximum value of δI-1. Therefore the dRmin is 0 and dRmax is δI-1. The same applies to the other color components).

5. Claims 2, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5689590 to Shirasawa et al in view of U.S. Patent No. 6167167 to Matsugu et al further in view of U.S. Patent No. 6631210 to Mutoh et al.

Regarding claim 2, Shirasawa et al '590 in view of Matsugu et al '167 teaches all the limitations of claim 1. However Shirasawa et al '590 in view of Matsugu et al '167 does not disclose an image processor, method, and program according to claim 1, wherein said second decision controller determines a maximum value among differences of color gradation value between the target pixel and the adjacent pixels thereof and decides whether the maximum value exists in the second ranges.

Mutoh et al disclose an image processor, method, and program, wherein said second decision controller determines a maximum value among differences of color gradation value between the target pixel and the adjacent pixels thereof and decides whether the maximum value exists in the second ranges (column 26, lines 29-42; column 32, lines 24-32).

Having the system of Shirasawa et al '590 in view of Matsugu et al '167 and then given the well-established teaching of Mutoh et al '210, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Shirasawa et al '590 in view of Matsugu et al '167 as taught by Mutoh et al '210 since Mutoh et al '210 stated in col. 32, Lines 38-46, such a modification would provide detection of deep color area using the maximum value.

Regarding claim 6, see Rejection of claim 2 as shown above. The apparatus of Shirasawa et al ‘590 in view of Matsugu et al '167 further in view of Mutoh et al ‘210 renders obvious the method steps disclosed in claim 6.

Regarding claim 9, see Rejection of claim 2 as shown above. The apparatus of Shirasawa et al ‘590 in view of Matsugu et al '167 further in view of Mutoh et al ‘210 renders obvious the programming steps disclosed in claim 9 since Shirasawa et al ‘590 discloses software for the processing (column 12, lines 66-67).

6. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5689590 to Shirasawa et al in view of U.S. Patent No. 6167167 to Matsugu et al further in view of U.S. Patent No. 6115494 to Sonoda et al.

Regarding claim 20, Shirasawa et al '590 in view of Matsugu et al '167 teaches all the limitations of claim 1. However Shirasawa et al '590 in view of Matsugu et al '167 does not disclose the image processor according to claim 1, further comprising:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller; and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them.

Sonoda et al '494 discloses:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller (column 7, lines 59-67; column 8,

lines 37-65; column 11, lines 10-24; The element reads on “marks 2” shown in Figure 1. The marks 2 have triangular shape.); and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them (Figure 5 shows the device wherein the pattern detector 17 detects pattern (column 14, lines 30-34) based on the extracted pixels from output 13c (column 10, lines 43-67; column 11, lines 1-9). The extracted pixels from output 13c are based on the detection of the colors of marks by reference 13a and 13b which make up the pattern of Figure 1. Thus the pattern is detected based on the extracted pixels from the binary processing unit 13 shown in Figure 5(column 13, lines 1-11, lines 23-30; column 14, lines 20-43). In column 11, lines 30-34, the pattern recognition is related to recognizing the marks using mark shape extraction unit 13a since the marks form the pattern (column 8, lines 36-40) that is to be detected. 13a is used for accuracy purpose in conjunction with 13b which detects the color of marks).

Having the system of Shirasawa et al '590 in view of Matsugu et al '167 and then given the well-established teaching of Sonoda et al '494, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Shirasawa et al '590 in view of Matsugu et al '167 as taught by Sonoda et al '494, since Sonoda et al '494 stated in col. 8, Lines 45-47, 60-62, such a modification would provide an accurate pattern detection system.

Regarding claim 21, see Rejection of claim 20 as shown above. The apparatus of Shirasawa et al ‘590 in view of Matsugu et al '167 further in view of Sonoda et al ‘494 renders obvious the method steps disclosed in claim 21.

Regarding claim 22, see Rejection of claim 20 as shown above. The apparatus of Shirasawa et al ‘590 in view of Matsugu et al '167 further in view of Sonoda et al ‘494 renders obvious the programming steps disclosed in claim 22 since Shirasawa et al ‘590 discloses software for the processing (column 12, lines 66-67).

7. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5689590 to Shirasawa et al in view of U.S. Patent No. 6115494 to Sonoda et al.

Regarding claim 23, Shirasawa et al '590 teaches all the limitations of claim 11. However Shirasawa et al '590 does not disclose the image processor according to claim 11, further comprising:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller; and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them.

Sonoda et al discloses:

an extraction controller which extracts an element having a predetermined shape based on the decision by said color decision controller (column 7, lines 59-67; column 8,

lines 37-65; column 11, lines 10-24; The element reads on “marks 2” shown in Figure 1. The marks 2 have triangular shape.); and

a pattern detector which detects a specified pattern in the image value discriminating whether the elements extracted by said extraction controller have a predetermined relationship between them (Figure 5 shows the device wherein the pattern detector 17 detects pattern (column 14, lines 30-34) based on the extracted pixels from output 13c (column 10, lines 43-67; column 11, lines 1-9). The extracted pixels from output 13c are based on the detection of the colors of marks by reference 13a and 13b which make up the pattern of Figure 1. Thus the pattern is detected based on the extracted pixels from the binary processing unit 13 shown in Figure 5(column 13, lines 1-11, lines 23-30; column 14, lines 20-43). In column 11, lines 30-34, the pattern recognition is related to recognizing the marks using mark shape extraction unit 13a since the marks form the pattern (column 8, lines 36-40) that is to be detected. 13a is used for accuracy purpose in conjunction with 13b which detects the color of marks).

Having the system of Shirasawa et al '590 and then given the well-established teaching of Sonoda et al '494, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Shirasawa et al '590 as taught by Sonoda et al '494, since Sonoda et al '494 stated in col. 8, Lines 45-47, 60-62, such a modification would provide an accurate pattern detection system.

Regarding claim 24, see Rejection of claim 23 as shown above. The apparatus of Shirasawa et al ‘590 in view of Sonoda et al ‘494 renders obvious the method steps disclosed in claim 24.

Regarding claim 25, see Rejection of claim 23 as shown above. The apparatus of Shirasawa et al '590 in view of Sonoda et al '494 renders obvious the programming steps disclosed in claim 25 since Shirasawa et al '590 discloses software for the processing (column 12, lines 66-67).

Other Prior Art Cited

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5696611 to Nishimura et al disclose color processor.

U.S. Patent No. 4244654 to Asai et al disclose color printing.

U.S. Patent No. 6101272 to Noguchi disclose color correction.

U.S. Patent No. 7339699 to Suzuki et al disclose printing unit.

JP 11-275599 to Ikeda disclose balancing of image data.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENIYAM MENBERU whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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